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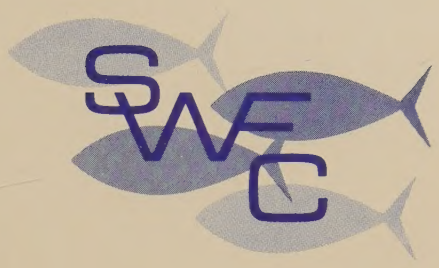

SOUTHWEST FISHERIES CENTER

MONTHLY REPORT - NOVEMBER 1982

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SOUTHWEST FISHERIES CENTER
LA JOLLA, CALIFORNIA

HONOLULU LABORATORY
LA JOLLA LABORATORY
TIBURON LABORATORY
PACIFIC ENVIRONMENTAL GROUP

MONTHLY REPORT - NOVEMBER 1982

STATUS OF PUBLICATIONS

Published

Brewer, Gary D. and Paul E. Smith. 1982. Northern anchovy and Pacific sardine spawning off southern California during 1978-80: preliminary observations on the importance of the nearshore coastal region. CalCOFI Rep. 23:160-171.

Estimates of egg and larval abundance of northern anchovy (Engraulis mordax) and larval abundance of Pacific sardine (Sardinops sagax caeruleus) from monthly Ichthyoplankton Coastal and Harbor Studies (ICHS) cruises during 1978-80 within the nearshore Southern California Bight (to the 43-m isobath) were contrasted with comparable estimates from CalCOFI region 7. The ICHS region encompassed 3.8 percent of the area in region 7.

Raw survey data, uncorrected for potential sampler biases, indicated that about 3 percent of northern anchovy larvae occurred within the nearshore zone relative to the entire region 7. This number may be equivalent to about 2 percent of the larvae spawned by the central subpopulation.

The abundance of Pacific sardine larvae in the coastal region increased from 1978-79 to 1979-80. Sardine larvae occurred most frequently during the summer and fall and were captured most often in Santa Monica Bay. CalCOFI data on Pacific sardine were too infrequent for comparison with ICHS data.

The ichthyoplankton data sets are discussed in relation to the nursery function of nearshore versus offshore waters and the need for additional criteria for assessing recruitment potential from the two regions.

THIS REPORT DOES NOT CONSTITUTE PUBLICATION AND IS FOR INFORMATION ONLY.

Butler, John L., H. Geoffrey Moser, Gregory S. Hageman, and Layne E. Nordgren. 1982. Developmental stages of three California sea basses (Paralabrax, Pisces, Serranidae). CalCOFI Rep. 23:252-268.

Eggs, larvae, and juveniles of kelp bass, Paralabrax clathratus, barred sand bass, P. nebulifer, and spotted sand bass, P. maculatofasciatus, are described from specimens reared in the laboratory and from specimens collected in the field. Eggs of spotted sand bass are 0.80-0.89 mm in diameter: eggs of kelp bass and barred sand bass are 0.94-0.97 mm in diameter. Larvae and juveniles of the three species may be distinguished by differences in pigmentation during most stages of development. Larvae of the two species of sand bass are indistinguishable during notochord flexion. Yolk-sac larvae of all three species are indistinguishable.

Hewitt, Roger P. and Richard D. Methot, Jr. 1982. Distribution and mortality of northern anchovy larvae in 1978 and 1979. CalCOFI Rep. 23:226-245.

Eleven ichthyoplankton surveys, conducted during the winter and spring quarters of 1978 and 1979, indicate that spawning of the northern anchovy, Engraulis mordax, was contracted both spatially and temporally in 1978 relative to 1979. Larvae were farther offshore in 1979. Instantaneous daily larval mortality rate estimated from slope of the age-frequency distribution (yolk sac through 15 mm. ca. 25-30 days) varied insignificantly between 1978 and 1979 and averaged 0.168. Comparison to a simple model of spawning suggests that seasonal changes in the slopes are due solely to a systematic bias and not to real changes in the mortality rate.

Seasonal larval production was compared with birthdate distributions of fish surviving to the juvenile stage. In both years March had the greatest larval production and was the commonest month of birth among the survivors of the larval stage. Larval survivorship tended to increase within the 1978 spawning season and decrease within the 1979 season. Low survivorship in winter 1978 is consistent with the hypothesis that winter storms disrupted aggregations of prey necessary for larval feeding, but does not explain why apparent recruitment was greater in 1978 than 1979. Variation in larval survivorship could not be attributed to larval mortality. The offshore distribution of larvae in 1979 may have contributed to the relatively low survival.

Hunter, John R. and Kathleen M. Coyne. 1982. The onset of schooling in northern anchovy larvae, Engraulis mordax. CalCOFI Rep. 23: 246-251.

Laboratory measurements indicate that schooling begins in larval northern anchovy when they are between 11 and 12 mm standard

length and is well established when they reach 13-15 mm. The onset of schooling closely parallels an increase in patchiness of larvae in the sea, and it begins during the period that larvae form a duplex retina and undergo major changes in their respiratory and locomotor systems.

Hunter, John R. and Harold Dorr. 1982. Thresholds for filter feeding in northern anchovy, Engraulis mordax. CalCOFI Rep. 23:198-204.

The density threshold for the onset of filter feeding in adult anchovy (Engraulis mordax) fell between 5 and 18 Artemia salina nauplii/l, between 1 and 2 anchovy eggs/l, and between 151 and 328 Gymnodinium splendens cells/l. Observations of the incidence of filtering schools indicate that behavioral changes occurred at lower food densities. These observations also indicate that the intensity of filtering by anchovy schools may be a function of the biomass of filterable foods. Filtering persisted long after the density in the tank was reduced below that required for the initiation of filter feeding.

Scura, Edward D. 1982. An in situ device for sensing and collecting microplankton. CalCOFI Rep. 23:205-211.

This report describes a simple system that was developed to search for and collect "patches" of microzooplankton at sea. It consists of a shipboard diaphragm pump, 50 meters of vacuum hose, and an in situ particle sensor attached to the influent end of the hose. This system was used to collect water at discrete depths while the particle concentration of the water was continuously monitored as it entered the pump hose.

Laboratory tests showed no significant avoidance by live microzooplankton of the particle sensor of the collecting device. There appeared to be no difference in the mortalities of organisms that were pumped through the system compared with those that did not pass through the system. In addition, laboratory tests indicate that small, high-density patches of microzooplankton can be collected with minimal smearing of the sample. The device was tested in several sea trials off the southern California coast, in the New York Bight, and in the Austnesfjorden near Lofoten, Norway. In Austnesfjorden, a water sample was collected that contained 0.6 micronauplii/ml. This is believed to be the highest concentration of micronauplii ever collected.

Stauffer, Gary D. and Richard L. Charter. 1982. The northern anchovy spawning biomass for the 1981-82 California fishing season. CalCOFI Rep. 23:15-19.

The biomass of the central subpopulation of the northern anchovy during the 1981 spawning season is estimated to be 2,803,000 short tons, based on the larva census method. Anchovy stock was surveyed over its geographic range on four cruises during the six-

month period from January to June. The anchovy larvae in the plankton samples were sorted, counted, and measured, and the data were summarized to form larva census information for estimating the anchovy spawning biomass. The resulting 1981 estimate of 2,803,000 tons is approximately 58 percent greater than the 1980 estimate of 1,775,000 tons. The optimum yield for the central subpopulation in the 1981-82 fishing season is 601,000 short tons, as specified by the yield formula given in the Pacific Fishery Management Council's Northern Anchovy Fishery Management Plan. Within the U.S. 200-mile Fishery Conservation Zone, the optimum yield is 420,700 tons.

Stevens, Elizabeth G. and H. Geoffrey Moser. 1982. Observations on the early life history of the mussel blenny, Hypsoblennius jenkinsi, and the bay blenny, Hypsoblennius gentilis, from specimens reared in the laboratory. CalCOFI Rep. 23:269-275.

Two egg masses of the mussel blenny, Hypsoblennius jenkinsi, with attending males, were collected in Mission Bay, California, and incubated in the aquarium. After hatching, the broods of larvae were reared to the benthic juvenile stage on a diet of the rotifer Brachionus plicatilus and brine shrimp. Juveniles of one of the broods were maintained in the aquarium to the adult stage. On day 141 after hatching, one of the females produced a viable egg mass from which larvae hatched in 22 days. A single egg mass of the bay blenny, Hypsoblennius gentilis, was collected and incubated in a similar manner, producing larvae that were reared to a length of 6.7 mm. This paper describes the eggs and larvae of H. jenkinsi, including growth rate, and provides characters for distinguishing the larvae of this species from H. gentilis larvae.

Translation

Marfin, Jean-Pierre. 1978. Biology and fishery of the spiny lobster, Panulirus guttatus, at Martinique. Sci. Peche, Bull. Inst. Peches Marit. 278:1-10. (Engl. transl. by Wilvan G. Van Campen, 1982, 12 p., Transl. No. 72; available Southwest Fish. Cent., Natl. Mar. Fish. Serv., NOAA, Honolulu, HI 96812.)

Tamura, Tamotsu. 1950. On the life history of Pandalus nipponensis Yokoya. Bull. Jpn. Soc. Sci. Fish. 15(11):721-724. (Engl. transl. by Wilvan G. Van Campen, 1982, 8 p., Transl. No. 73; available Southwest Fish. Cent., Natl. Mar. Fish. Serv., NOAA, Honolulu, HI 96812.)

Kashiwagi, Masaaki. 1974. Ecological studies on the hokkai-ebi, Pandalus kessleri, found in Yamada Bay--I. On growth and the egg-carrying period. Bull. Jpn. Soc. Sci. Fish. 40(7):635-642. (Engl. transl. by Wilvan G. Van Campen, 1982, 11 p., Transl. No. 75; available Southwest Fish. Cent., Natl. Mar. Fish. Serv., NOAA, Honolulu, HI 96812.

Administrative Reports

Polovina,Jeffry J. and Robert C. Roush. 1982. Chartlets of selected fishing banks and pinnacles in the Mariana Archipelago. SWFC Admin. Rep. H-82-19.

Hida, Thomas S., and Robert A. Skillman. 1982. A note on the commercial fisheries in Hawaii. SWFC Admin. Rep. H-82-20.

Approved by Center Director

Brown, Martha T. Counting the dolphins: New answers to an important riddle. For consideration for publication in Sea Frontiers.

DeMaster, Douglas P. Review of techniques used to estimate the average age of sexual maturity in marine mammals. For publication in the IWC Conference Proceedings.

Hewitt, Roger. Roll, heave and vertical ichthyoplankton tows For consideration for publication in Ocean Science and Engineering.

Lenarz, W. H. Aging and growth of widow rockfish. For consideration for publication in Special Scientific Report: Fish.

HONOLULU LABORATORY

INSULAR RESOURCES INVESTIGATIONS

Report on Bathymetric Work Completed

Dr. Jeffrey J. Polovina, Leader, Resource Assessment Investigation of the Mariana Archipelago (RAIOMA), and CDR. Robert C. Roush, Commanding Officer, NOAA research vessel, Townsend Cromwell, have completed a Southwest Fisheries Center Administrative Report, "Chartlets of selected banks and pinnacles in the Mariana Archipelago." This report presents contour charts of the ocean floor around 12 islands and banks for which the bathymetric detail on existing charts is inadequate. The bathymetric work for these chartlets was conducted from the Townsend Cromwell April through August 1982, and was focused on areas with bottom depths between 183 and 915 m (100 and 500 fathoms) which have resources of bottom fishes and deepwater shrimps.

Although the primary purpose of the chartlets is to enable researchers in the RAIOMA Program to estimate the area of deepwater shrimp and bottom fish habitat in the Mariana Archipelago, these chartlets should also be useful to local fishermen. Of particular interest are chartlets for a bank 35 nmi southwest of Guam and another for a deep plateau extending north of Saipan. These areas have substantial deepwater shrimp habitats, and both areas were charted in detail for the first time. Also of interest is the chartlet which shows that Farallon de Medinilla is surrounded by a large bank with almost 100 nmi^2 of area less than 91 m (50 fathoms) in depth.

Undescribed Fish Species Collected on Dive of Research Submersible

Dr. Stephen Ralston, Fishery Biologist, reported that one of the fish species collected with rotenone during his work with the Hawaii Undersea Research Laboratory's research submersible, Makalii, is new to science. A number of specimens, including males and females, were collected of this undescribed anthiid, a group which is characterized by sexual dimorphism. Ralston is planning to publish a description of the species in collaboration with Dr. John Randall of the Bishop Museum. In addition to the anthiid, an unidentified scorpaenid (Pontinus sp.) was also collected, and specimens have been sent to Dr. William Eschmeyer at the California Academy of Sciences for identification. The videotape and slides taken during these dives are now being processed.

FISHERY MANAGEMENT RESEARCH PROGRAM

Mechanism Devised to Handle Data

Dr. Robert A. Skillman, Leader, Fishery Management Research Program (FMRP), reports that his program is now responsible for overseeing the handling of nearly all the Honolulu Laboratory's fishery data that is collected on a routine basis. Skillman and Ray F. Sumida, Fishery Biologist, have devised a mechanism, similar to the procedures developed in the Data Management and Technical Services (DMTS) Task, to handle these data sets. A form has been prepared to log information on any coding or error checking performed by FMRP personnel, and the date the data are turned over to DMTS. The information in the form will be incorporated in the FMRP's data journal which was set up on a microcomputer in 1981 by Daniel Locey, NOAA Junior Fellow.

In addition, research assistants Bert S. Kikkawa and Victor A. Honda have been updating records of the detailed fishing characteristics of vessels in the Hawaiian pole-and-line and longline fisheries. Skillman has begun designing a microcomputer file for these data.

Honolulu Laboratory Economist Attends Workshop in Florida

Samuel G. Pooley, Industry Economist, attended the national meeting of National Marine Fisheries Service economists in Orlando, Florida, which was devoted to discussions on methodologies for evaluating the impact of regulations and public expenditures on recreational fisheries. The Orlando workshop has application to the Honolulu Laboratory's attempts to provide the Western and Pacific Regional Fishery Management Council (WPRFMC) with socio-economic information on billfish and bottom fish management problems. The discussions at the Orlando workshop should be useful in making such estimates on two ongoing contracts (methodologies of recreational valuation and economic impact of charterboat fishing) with Dr. Karl Samples of the University of Hawaii. Pooley has scheduled another meeting of the region's economists in December to discuss recreational valuation.

New Fishery Data Summaries Prepared

Randy F. Stark, Computer Programmer, processed data obtained recently from several Hawaii fish dealers for use in updating the draft billfish fishery management plan (FMP). Because of time constraints, shortcuts were taken in routine data handling and verification procedures. Stark reports that minor modifications to the data have been completed and data processing is continuing. Because the purchase price was frequently missing from individual entries, calculated price per pound has now been used to produce estimates of total value for the reported weight purchased. Similarly, the number of fish purchased was frequently missing as well. Using calculated average weight by species or species-group, the total number of fish purchased has been estimated. These new data summaries will be sent to the WPRFMC and other interested parties.

Fishery Economics Contract Work Progressing

Samuel Pooley, Industry Economist, reports that progress on all three major fishery economics contracts appears to be proceeding well at this time, although the three smaller contracts are slow in starting. Sampling for the retail seafood market survey should begin the last week in November and be completed by the end of December. Sampling for the handline study is also continuing although the random sample approach (necessitated by the lack of a vessel inventory by vessel classes) is leading to a relatively high rejection rate. The charterboat operators survey being conducted by Dr. Samples is in the questionnaire definition stage. Actual sampling probably will not begin until January 1983.

Hawaii Landings of Skipjack Tuna Continue Below Long-Term Average

The November 1982 Hawaii landings of skipjack tuna were estimated at 80 metric tons (MT), which is 18 MT above the November 1981 landings and 108 MT below the 1964-79 long-term average for November. The cumulative landings from January through November were estimated at 1,694 MT which is 422 MT below the 1981 landings for the same period and 2,220 MT below the 1964-79 long-term average for the same period (Figure 1).

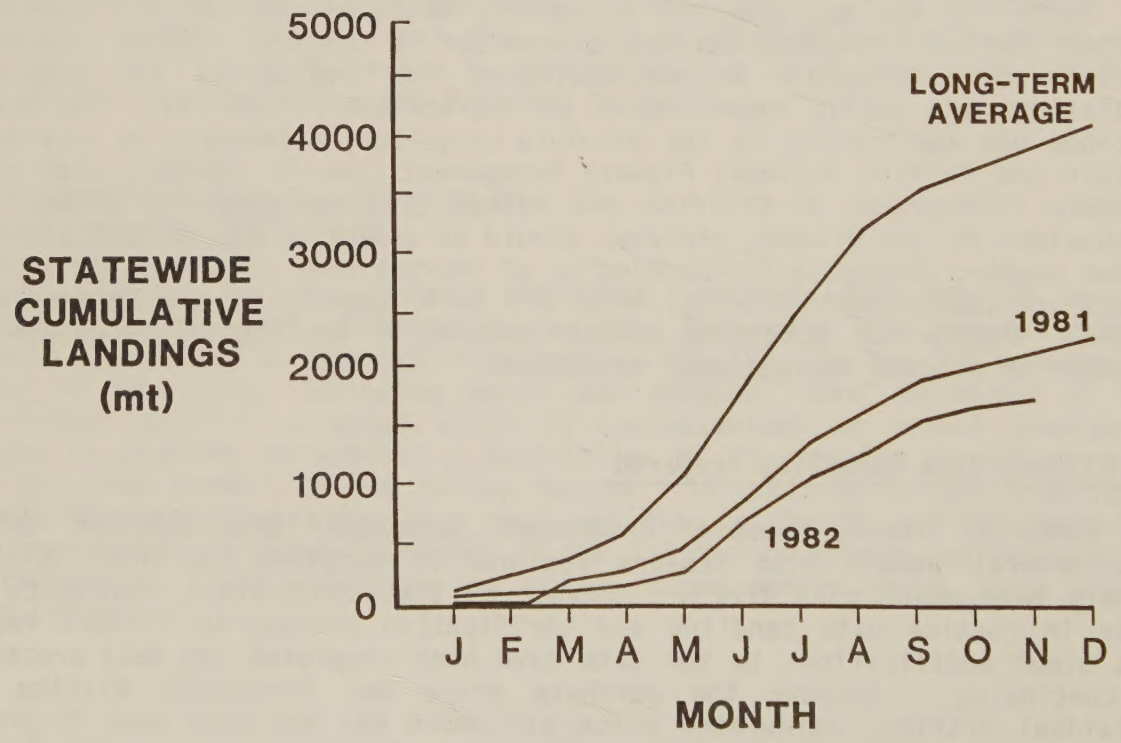

Figure 1. Cumulative landings in the Hawaiiian skipjack tuna fishery.

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Following the journal review of the manuscript, "Feeding ecology of seabirds of the Northwestern Hawaiian Islands" (by Craig Harrison, U.S. Fish and Wildlife Service, Thomas S. Hida, and Michael P. Seki), Thomas S. Hida, Fishery Biologist, worked on revising the manuscript, which will be published in Wildlife Monographs. Also, Hida and Dr. Robert Skillman, Leader of the Fishery Management Research Program, completed an Administrative Report, "A note on commercial fisheries in Hawaii."

LA JOLLA LABORATORY

Coastal Fisheries Resources Division

COMMERCIAL AND RECREATIONAL FISHERIES RESEARCH FOR MANAGEMENT

PFMC Approves Anchovy Plan Amendment

Dr. Richard Methot, Fishery Biologist, reports that the Pacific Fishery Management Council (PFMC) approved the latest amendment to the Anchovy Fishery Management Plan on November 18, 1982, in Monterey, CA. Two changes were incorporated in the amendment. The first removes the minimum size limit of 5 inches total length currently applied to the reduction fishery, and adds a minimum mesh size requirement of 10/16 inch. The mesh size regulation will not take effect until April 1986. This minimizes hardship to the few fishermen who currently have nets with slightly undersized mesh. The second change splits the annual U.S. quota into two halves. The first half is allocated at the beginning of the season. The second half is released later in the season unless the NMFS Regional Director receives documented evidence indicating that harvest of the second half of the quota would reduce the spawning biomass below one million short tons.

Proportion of Anchovy Stock in Mexican waters and the 1983 Anchovy Biomass Estimate

This month fishery biologist Alec MacCall and statistician Susan Picquelle investigated the consequences of missing the Mexican portion of the upcoming 1983 anchovy egg/trawl survey. Historically, about 70% of the central stock of anchovies occurs north of the U.S.-Mexican border, but variability of the annual proportion is high (coefficient of variation = 22%). If no permit is received to conduct the survey in Mexican waters, the 1983 biomass estimate will have to be calculated in two parts; first the biomass north of the border will be estimated by the egg production method using data from the egg/trawl survey, and second, the biomass south of the border will be estimated using the historical proportion of biomass in Mexican waters. Given levels of sampling north of the border equivalant to that in earlier years, the coefficient of variation for the total biomass estimate will be about 34%, resulting in a 95% confidence interval for the biomass estimate of 70%.

Given the unavoidable imprecision introduced by the extrapolation of biomass estimate to the Mexican portion of the stock, MacCall suggests that the need for high precision in the U.S. portion of the survey is reduced. At substantially decreased sampling intensity in the U.S. zone, the coefficient of variation in the total biomass estimate would increase to only 35 or 36%.

Development of Revised Anchovy Plan Continues

Alec MacCall, Fishery Biologist, reports continued development of a draft revised anchovy fishery management plan for presentation to the Pacific Fishery Management Council in January 1983. MacCall estimated a stock-stock biomass (Bt) transition model based on the power function: Bt = aBtb. This model provides a good fit to the data, and is nearly indistinguishable for three-parameter generalized production model fit. The deterministic production model curve shows a maximum sustainable yield (MSY) of 292,00 short tons occurring at a spawning biomass of 462,000 tons, and a maximum unfished biomass of 1,575,000 tons. Due to the strong influence of random variability of the anchovy population, a stochastic version of the above model was investigated. Monte Carlo simulation of 1,000 year time series showed MSY (now interpreted as the maximum long-term average under an adaptive harvest policy) to be 277,000 tons. Simulation of an unfished resource gives an average spawning biomass of 1.4 million tons. Annual biomasses are highly variable, but the simulation did not show biomasses as low as those historically observed in the early 1950's. This suggests that the simulation model is a bit optimistic.

Tables Produced For Anchovy Spawning Maturity Study

In conjunction with John Hunter, Fishery Biologist, Sue Picquelle, Statistician, produced a series of tables that show the relationship between two histological characteristics that indicate the reproductive condition of female anchovies. These characteristics show whether or not the female is sexually mature, if the female has recently spawned, and if the female is currently in its spawning season or if she has ceased spawning for the year. In order to examine the relationship between geographical region, maturity, length of spawning season, and spawning frequency, tables were produced for many sequences of trawl samples corresponding to various times of year, regions and anchovy habitat. The time period covered is 1977-1982.

COASTAL EASTERN PACIFIC: POPULATION BIOLOGY OF FISHES

Short Spawning Season for 1-year-old Anchovy Indicated

Dr. John Hunter, Fishery Biologist, reports that Beverly Macewicz, on contract from Scripps Institution of Oceanography, with the help of statistician Susan Picquelle, completed an analysis of the atretic state of anchovy ovaries taken during various cruises from 1980-1981. The proportion of females with atretic ovaries in two length classes (length $\leq$ 10 cm and L > 10 cm) was examined for each cruise. The data are given below:

Year	From	To	Female, length ≤ 10 cm N	Female, length ≤ 10 cm % with atretic ovaries	Female, length > 10 cm N	Female, length > 10 cm % with atretic ovaries
1981	2/5	3/6	503	4.2	837	2.0
1980	3/20	4/10	68	8.8	334	1.8
1981	4/10	4/19	105	35.0	874	9.4
1981	4/15	4/30	12	50.0	25	40.0
1980	4/24	4/27	78	79.0	100	26.0
1980	5/15	5/28	21	52.0	49	26.0

In every case, regardless of the cruise period, small females (L < 10 cm) consistently had a higher rate of ovarian atresia than did the larger females. This difference was statistically significant (Chi-square test P = 0.05) for February, even though this is the first month of intensive spawning and the levels of atresia are low (small females = 4%, large females = 2%). The incidence of atretic ovaries increased in both of the length groups as the spawning season progressed, with the incidence always higher in the smaller fish. Atresia, the resorption of oocytes and ovarian tissue, is an index of the cessation of spawning. Females with ovaries containing post-ovulatory follicles and a low incidence of atretic yolked oocytes are occasionally encountered, indicating recent spawning despite the atretic ovarian state (however, atresia may have developed subsequent to spawning).

At higher levels of atresia, less than 1% of the females show any evidence of past spawning. Thus, the consistently high incidence of atresia in small females indicates that they probably have a much shorter spawning season than do older females. Females less than 10 cm are about one year old, and are probably in their first spawning season, whereas those larger than 10 cm are 2- and 3-year-olds and have spawned during previous seasons.

These results indicate that the duration of the anchovy's first spawning season may be quite short, with the season ending for some females in February, and for most by late April. The older fish continue to spawn for much longer periods.

Calcium Metabolism of Fishes Discussed

Fishery biologist John Butler convened a meeting of various Southwest Fisheries Center personnel and invited guests to talk about calcium metabolism in fishes. Dr. Len Deftos, Veterans Administration Hospital, discussed his

studies on the role of calcitonin in the calcium homeostasis of spawning salmon. Dr. Julie Glowacki of the Salk Institute presented her work on calcium resorbtion and bone formation in sharks and mammals. A general discussion was held on the possible roles of calcitonin in otolith increment formation and vitellogenesis in fishes, and the participants talked about cooperative areas of research.

Plankton Analysis Continues

Dr. Angeles Alvariño, Fisheries Research Biologist, continued the analysis of zooplankton samples containing more than one but less than 80 northern anchovy eggs. The samples were collected on cruise 8104 of the NOAA research vessel David Starr Jordan.

The lists of species prepared by Dr. Alvariño include the number of specimens per species of Cladocera, Ostracoda, Copepoda, various kinds of larvae of Decapod Crustacea, Echinoderm larvae (Ophiopluteus, Echinopluteus, Barachiolaria), other invertebrate larvae (Membranipora, Phoronis, Pilidium, Arachnaetis, and Turnaria), Medusae, Siphonophorae, Ctenophora, Pelagic mollusca and larvae, and Polychaeta and their larvae. Also included are Euphasiidae, Amphipoda, Chaetognatha, Foraminifera, and Radiolaria. In the case of Copepoda and other zooplanktonic groups, the number of males and females, and the stage of sexual maturity were recorded.

Alvariño also prepared a description of a new siphonophore found in the 8104 CALVET collection. Illustrations of the complete animal, and detailed drawings of nectophores, bracts, gastrozoids, tentacles, palpons, tentilla, and female and male gonophores were completed.

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Dr. Reuben Lasker, Coastal Division Chief, presented a paper entitled "The role of the California Cooperative Oceanic Fisheries Investigations in fisheries research and management" at the Symposium on the future role of California in marine resources management, held at Asilomar, California, November 9.

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A meeting was held on November 18 to decide on contingency plans for use of the NOAA research vessel Townsend Cromwell, in the event a Mexican permit was denied to the ship. Dr. Reuben Lasker, Coastal Division Chief, chaired this meeting. It was decided that repeat coverage of the anchovy spawning area would be desirable to obtain a larger number of positive samples for anchovy eggs.

Oceanic Fisheries Resources Division

Status of Atlantic Tuna and Billfish Resources Assessed by ICCAT

Southwest Fisheries Center Director Izadore Barrett, together with Oceanic Division Chief Gary Sakagawa, and fishery biologists Norm Bartoo and David Au, attended the 1982 meeting of the International Commision for the Conservation of Atlantic Tunas (ICCAT) Standing Committee for Research and Statistics (SCRS), November 3-9, 1982, in Funchal, Madeira, Portugal.

Several working papers were prepared by the Southwest Fisheries Center Tuna/Billfish Resources Staff and presented at the meeting of the Standing Committee of Research and Statistics (SCRS). Authors and titles of the working papers are:

Au, D. Production model analysis of the Atlantic yellowfin tuna (Thunnus albacares) fishery.

Bartoo, N.W., and A.L. Coan. Production model analysis of the south Atlantic albacore stock and effect of data accuracy.

Coan, A.L., and G.T. Sakagawa. U.S. tropical tuna purse seine single set analysis, 1967-1980.

Foster, T.C. Size and species compositions of Atlantic tunas from imports landed in Puerto Rico during 1981.

Herrick, S. A review of the tropical tuna fishery of the Atlantic Ocean, 1975-1980.

The SCRS scientists prepared status of stocks reports on Atlantic tuna and billfish stocks to assist the Commission in identifying needed conservation measures.

The SCRS appraisal of yellowfin tuna stocks in the Atlantic Ocean found that on an Atlantic-wide basis yellowfin tuna catches are currently near estimated maximum sustainable yield (MSY) (123,000 MT) and that the fishery might be operating beyond the optimal level of effort (i.e., the effort level corresponding to the estimated MSY). Considered separately, yellowfin tuna in the eastern Atlantic are currently being fished above the lower end of the range of point estimates for MSY (110,000-120,000 MT) with the corresponding effort level possibly in excess of that which is considered optimal. It was not possible to draw any conclusions concerning the status of yellowfin tuna in the western Atlantic due to lack of information from the fisheries operating in this area.

The Committee's opinion was that Atlantic skipjack tuna catches are still below potential levels. However, the relation of recent catches to MSY is

still unknown pending completion of analyses which recently have been begun using data collected during ICCAT's International Skipjack Year Program.

The SCRS assessment of Atlantic bigeye tuna found that on an Atlantic-wide basis the stock is currently being exploited close to the lowest point estimate of MSY (52,900 MT). For a separate northern Atlantic bigeye tuna stock, current catches and corresponding effort levels have been below those associated with MSY (33,000-71,000 MT). For a separate south Atlantic stock, current catches and corresponding effort levels have been above those associated with MSY (21,000-49,000 MT). Only in the case of a separate northern stock would an increase in effort likely result in an increase in sustainable yield.

The Committee's appraisal of Atlantic albacore tuna stocks indicated that the northern stock is currently subject to moderate exploitation, while the southern stock appears to be over-exploited, given results of production model analyses presented at this year's meeting.

The SCRS was unable to make a conclusive statement concerning the status of bluefin tuna in the western Atlantic due to the uncertainty surrounding results of analyses presented at their 1982 meeting. However, the principal analyses did agree that, for the west, there has been some decline in abundance, that recruitment may have decreased in recent years, and that there is little relation between recruitment and spawning potential with data so far used. For the eastern Atlantic as well as the total Atlantic, uncertainty related to analytical results and significant changes in the historical catch statistics was too great to allow conclusions as to the status of the stocks.

As in 1981, the Committee expressed concern over the decline in catches and apparent abundance of Atlantic billfish (blue marlin, white marlin, sailfish and swordfish) resources. However, there is still insufficient information to make firm evaluations on the condition of these resources at this time.

Reports were also prepared on the multi-species aspects of fisheries for both temperate and tropical tuna and tuna-like species. The SCRS recognized that multi-species interaction considerations fall into two broad categories. One involves the biological requirements of coexisting or competing species in the same habitat. The second has to do with fisheries that exploit this co-occurrence of species with various fishing gears and fishing procedures.

The SCRS did not recommend any new management measures for the conservation of Atlantic tuna and billfish at its 1982 meeting.

Status of Atlantic Tuna Fishery Sampling Program

During the period January 1, 1982 to December 1, 1982, four foreign tuna purse seiners fishing in the Atlantic Ocean transshipped their catches to Puerto Rico. Twenty-one size composition samples were collected for the Tuna/Billfish Resources Program by Inter-American Tropical Tuna Commission personnel. The sampling distribution is as follows:

Species	Trips sampled	# of sampled	# of fish sampled
Yellowfin	6	11	480
Skipjack	5	8	375

Foreign-caught Atlantic tunas transshipped to Puerto Rico are sampled routinely for biological information by biological technician Eugene Holzapfel. Data on fork length, weight and species composition of catches are collected. Results of Holzapel's sampling during the period January 1, 1982 to December 1, 1982 are as follows:

Species and gear	# of samples	# of fish sampled	Tonnage sampled (MT)
Yellowfin			
Baitboat	10	893	123.70
Purse seine	26	2015	1806.13
Longline	1	89	246.59
Unknown	10	775	67.00
Skipjack			
Baitboat	15	659	1472.88
Purse seine	12	602	3665.95
Unknown	4	203	940.22
Bigeye			
Baitboat	2	61	1.24
Purse seine	19	706	675.40
Unknown	4	107	155.13
Albacore			
Longline	1	50	372.10
Blackfin			
Baitboat	1	50	6.12

In addition, the staff of the Tuna/Billfish Resources Program has received biological samples from the western Atlantic throughout 1982. Holzapfel and biological aid Raul Rivera have collected and sent to the Southwest Fisheries Center 635 skipjack tuna gonads and 211 skipjack tuna stomachs. The Tuna/Billfish Resources Program also received 905 skipjack tuna gonads and 910 skipjack tuna stomachs from the Brazilian Fisheries Agency S.U.D.E.P.E.

The stomach and gonad samples are being analyzed as part of the International Commission for the Conservation of Atlantic Tunas' International Skipjack Year Program. Biological technician Lisa Ankenbrandt has analyzed the contents of most of the stomachs. Maturity and fecundity studies on the gonads are being performed under contract by Steven R. Goldberg of Whittier College.

MARINE MAMMAL BIOLOGY PROGRAM

Dolphin Distribution Reviewed

Several Southwest Fisheries Center staff members are engaged in a review of the distribution of dolphins in the eastern tropical Pacific in preparation for the next round of dolphin stock assessment meetings in 1984.

Fishery biologists William Perrin and David Au, computer specialists Frank Ralston and Jay Walker, and Michael Scott of the Inter-American Tropical Tuna Commission (IATTC), are reviewing all available data for the spotted dolphin (Stenella attenuata), the spinner dolphin (S. longirostris), the striped dolphin (S. coeruleoalba) and the common dolphin (Delphinus delphis). The data sources include sightings recorded by National Marine Fisheries Service and IATTC observers aboard commercial tuna seiners and oceanographic research vessels, records of aerial surveys (4), IATTC tuna logbooks, and miscellaneous sources such as PTDF cruises, albacore research cruises, and sightings reported by private recreational vessels.

The report of this effort will contain an updating of the species' distribution boundaries and an annotated catalog of data sources. The report will be reviewed by a panel of experts that will meet in late January 1983. Portions of the work completed in November include development of computer program packages to extract and plot sightings and effort data, cataloging of most of the data sources, and review editing of NMFS tunaboat-observer sighting records for 1980-1982. Plans are to complete a draft version of the report by mid-December.

Earbone Sample Supplemented for Bowhead Aging Study

Mary Nerini, National Marine Mammal Laboratory, Northwest and Alaska Fisheries Center, and Dr. Al Myrick, Leader of the Marine Mammal Age Determination Project, have prepared decalcified and stained thin sections of tympanic bullae of four more bowhead whales. This brings to seven the total number of specimens in a project to develop a method for determining the age of these exploited Arctic whales. Myrick reports that preliminary examinations of the thin sections show well-defined layers in all seven specimens. The next step is to develop criteria, using age estimated from specimen body length, to define year layers. Myrick and Nerini will make layer counts independently and will report their methods and results in a short paper to be prepared for publication.

Preparation Completed and Female Age Determination Begun on Sample of 1981 Spotted Dolphin Teeth.

Technicians of the Marine Mammal Age Determination Project recently completed preparation of tooth thin sections for the entire available sample of female spotted dolphins taken in 1981, considerably ahead of schedule. Using the batch processing method, biological technicians Priscilla Sloan and Drew Stanley, and fishery biologist Makoto Kimura, produced decalcified and stained thin sections of approximately 320 teeth. Dr. Al Myrick, Project Leader, and Aleta Hohn, Zoologist, have begun reading the growth layers to determine ages. When the readings are completed, the age data from the 1981 females will be compared with those from the female samples taken in 1973-1978 in an effort to detect any changes in age-specific vital rates and age composition with time and geographical area.

Feeding Habits of Sea Lions Studied

As part of efforts to identify and quantify the roles of pinnipeds in the coastal ecosystem, Mark Lowry, Biological Technician, has been studying the food habits of the California sea lion, Zalophus californianus. Thus far, 303 scats from San Clemente Island, and contents of 13 stomachs recovered by the Marine Mammal Salvage Program have been sorted for otoliths and cephalopod beaks. After tentatively identifying all of the cephalopod beak samples, Lowry conferred with Erik Hochberg of the Santa Barbara Natural History Museam who verified, corrected, and instructed him on cephalopod beak identification.

Out of the 303 scats and 13 stomach samples examined thus far, 30% of the scats and 54% of the stomachs contained cephalopod remains. Of the ten cephalopod species found, Loligo opalescens was in 76% of the scats and 57% of the stomachs. Other cephalopod species identified were: Onychoteuthis boreallijaponicus, Abraliopsis falco, A. felis, Octopus rubescens, Octopodoteuthis deletron, Gonatis sp., Gonathidae, Mastigoteuthis dentata, and possibly M. pyrodes.

The next step is to identify the fish otoliths and complete sorting the remaining samples.

TIBURON LABORATORY

PHYSIOLOGICAL ECOLOGY INVESTIGATION

Update on Striped Bass Studies

In November, a televideo microcomputer system was installed at the Tiburon Laboratory. Staff members of the Physiology task are currently being trained in the use of the computer for word processing and statistical analysis. The system will be used extensively for the preparation of manuscripts resulting from research done on the effects of pollutants on striped bass. Dr. Jeannette Whipple, Fishery Biologist, is preparing the list of manuscripts-in-preparation with coauthorships determined in cooperation with the rest of the Physiology Investigations staff.

Sharon Moreland of San Francisco State University has completed preliminary analyses of data resulting from laboratory experiments with juvenile striped bass. Moreland and Whipple are reviewing data in preparation for publication. Rahel Fischer, Data Clerk, is checking data from field collections (all years, 1978-1982, and locations) from the San Francisco Bay-Delta, California, Coos River, Oregon, Lake Mead, Nevada, and Hudson River, New York.

A third progress report for the Cooperative Striped Bass Study (COSBS) is being prepared by Marvin Jung and Jeanette Whipple and will be published by the California State Water Resources Control Board with the cooperation of the National Marine Fisheries Service.

Because OMPA will not be funding further research on the effects of pollutants on striped bass, the staff has had to separate temporary employees Karen Taberski and Carol Reilly, Fishery Biologists, and Robert Hamilton, Computer Programmer, from the program. On December 3, Karen Taberski will give a presentation on her M.S. thesis research at the Tiburon Laboratory. The title of the thesis is, "Effects of benzene on tissues of juvenile striped bass: histopathology."

The Physiology Staff visited the Corps of Engineers San Francisco Bay-Delta hydraulic model in Sausalito, California, on November 24. Experiments are being conducted on the effects of levee breaks on the flow in the system. The staff was given a lecture, tour and demonstration. This model had been useful in visualizing potential effects of flow on striped bass during their spawning migration and early life stages in the Delta nursery areas.

Field Experiments on Striped Bass Eggs and Larvae Planned

Initial preparation are underway for a series of field experiments designed to study the ecology of striped bass eggs and larvae in their natural

spawning and nursery areas. These experiments are needed to test conclusions of earlier egg and larvae research conducted in 6 years of laboratory work.

Laboratory reared larvae were tested for their abilities to withstand starvation and their reaction to different food densities. From this work the researchers concluded that larvae were physiologically plastic in their adaptiveness to pollutant and food-related stresses and they required relatively large daily food rations for normal development and survival. Important growth and survival seemed to be linked to the developmental period from first feeding to approximately 3 weeks post-hatch. Larvae in the San Francisco Bay-Delta estuary mainly rely on a restricted number of microzooplankters (Eurytemors sp., Cyclops sp., and cladocerans) during this period.

Recent reports on proposed causes of declines of striped bass populations on both coasts cite reduced or inadequate microzooplankton supplies in the nursery areas as one of the main causal factors. The staff intends to explore this problem by a series of experiments similar to the laboratory experiments, but modified for field condition. Natural food (wild zooplankton) and feeding ecology will be studied as well as other physiological variables relating to capacity of the animals to perform. Plans for the upcoming experimental season call for the development of rearing and testing methods in the field along with a concentrated survey of pollutants in water and zooplankton. Because of rigorous conditions in the estuary and the need to control some aspects of the experiments, the staff will use a variety of rearing techniques. Experiments are scheduled for the normal striped bass spawning season, April to July.

UNDERUTILIZED FISHERIES RESOURCES

Bad Weather Hampers Crab and Shrimp Fishing Trials

The primary objective of the Fisheries Development Task during the recent cruise of the NOAA research vessel David Starr Jordan was to locate tanner crab and spot prawn fishing grounds off Bodega Canyon. Fishery biologists Bill Leet and Sennen Salapare reported that high winds and heavy seas in the vicinity of the proposed fishing trials prevented setting the gear as planned. The gear was, however, deployed later in the cruise in the Ascencion Canyon area, where work by the Fish Communities Investigations Task was being conducted. Fish traps and side opening tanner crab pots proved to be successful in catching sablefish, but only one live spot prawn and no tanner crabs were caught.

FISH COMMUNITIES INVESTIGATION

Shortbelly Rockfish Cruise Produces Mixed Results

The shortbelly rockfish study group of the Predator/Prey Task completed its final cruise on the NOAA research vessel David Starr Jordan this month. Cruise leader Tony Chess, Fishery Biologist, reported that efforts to collect specimens of this fish off central California for study of food habits were unsuccessful, owing to a breakdown of the system used to monitor the depth of the trawl. Collections of plankton taken day and night to study diel patterns of movement in the prey were successfully completed. Other cruise members were fishery biologists Pete Adams and Susan Smith, and biological technician Dan Howard, of the Tiburon Laboratory, and Paul Fischer of San Francisco State University.

Recommendations on Widow Rockfish Accepted

The Groundfish Management Team, of which Dr. William Lenarz, Leader of the Groundfish Task, is a member, made several recommendations bearing on the widow rockfish fishery that were accepted by the Fishery Council during their meeting in Monterey, California, this month. Although lightly fished prior to 1979, stocks of the widow rockfish are now estimated to be at or below maximum sustainable yield levels. The Council accepted the Management Team's recommendation to set the Optimal Yield for this species at 10,500 MT, which is the 1983 ABC. This is considerably below the 26,000 MT projected for 1982, and the peak catch of 29,000 MT taken in 1981.

Recaptured Leopard Shark To Be Used In Ageing Studies

During November, Susan Smith, Fishery Biologist with the Predator/Prey Task, received two additional recaptured leopard sharks (Triakis semifasciata) from the 948 fish she originally tagged three years ago in San Francisco Bay. One shark was taken in the ocean off Half Moon Bay, California by a commercial fisherman, and the other recovered by a sportsman fishing in Elkhorn Slough, Monterey Bay, California. As with all the leopard sharks tagged in 1979, these fish had been injected with the fluorophor and time marker tetracycline, to determine if variations in calcification in the vertebrae are laid down annually, or are in any way time related and thus useful for aging. Both sharks were recovered intact and will be examined for the tetracycline time mark. The Elkhorn Slough return is noteworthy in that it provides the first documented evidence of any exchange between San Francisco Bay and Elkhorn Slough leopard shark populations. Smith plans to present results of her leopard shark work at the upcoming Western Groundfish Workshop at Asilomar, California, in January.

FISHERIES INFORMATION SYSTEMS AND AUTOMATIC DATA PROCESSING

CALFIN Update

A CALFIN meeting was held at the Califonia Department of Fish and Game Office, Long Beach, California to discuss the CALFIN project. Staff members of the Southwest Fisheries Center (SWFC), Southwest Region (SWR) and California Department of Fish and Game (CDF&G) attended the meeting. The CALFIN "credit card" system will greatly improve the quality of fishery landing data, by having some of the data imprinted on the receipts when the fish are landed. CDF&G fishery landing data for the years 1980 and 1982 should be completed in early 1983; CDF&G fishery landing data for 1981 were completed in 1982.

Update on Procurement

Dorothy Roll, Systems Analyst, reports that two procurement requests routed to Washington, D.C. have been approved. They are for one 10 megabyte hard disk drive for the La Jolla Standard Micro System to be used for the development/maintenance of ADP support projects, and the peripheral equipment and software to complete the configuration for the HP 9826A microcomputer used by the Coastal Eastern Fisheries Environmental Investigations task group for oceanographic data collection and anaysis.

During November, two procurement packages were sent to Washington, D.C. for the approval process. The packages contained the following procurement requests: two La Jolla Standard Micro Systems and peripherals for the Oceanic Fisheries Resources Division, an amendment to increase by $30,000 the Honolulu Laboratory's computer services contract with the University of Hawaii, the second phase procurement (upgrade) for the Tiburon Laboratory's remote job entry system, and the microcomputer system for the Southwest Region's Western Pacific Program Office (WPPO) in Honolulu.

Progress on FRS Conversion

Robert Nydam, Computer Programmer Analyst, and Dorothy Roll, Systems Analyst, met with Ben Remington, Executive Officer, to discuss the Financial Reporting System (FRS). Plans are to convert the FRS from the ADP Network Services to an in-house stand-alone microcomputer system with dial-in access by remote users. Implementation on the micro system is targeted for FY 1984 reports. For FY 1983 the current FRS will continue on the ADP Network Services with minor changes/output format modifications. The start-up data will be entered and the first report is scheduled for December.

ORION System Reviewed

Computer specialists Richard Charter and Susan Iacometti are reviewing the Jordan's Oceanographic Research Interactive Onboard Network (ORION) System. The ORION is implemented on the Hewlett Packard 9845 microcomputer, which is integrated with the CAMAC, a data/instrument digitizing and collecting hardware device, and the Texas Instument 733 ASR terminal with data cassettes. They are assessing the adequacy of the Hewlett Packard's memory size and hardware capabilities relative to the increasing demands for shipboard data management functions. These new requirements indicate the need for a computer system capable of handling multi-users and multi-tasks at any given time. The HP 9845 is a single tasking-single user machine.

Super-Microcomputers Discussed

The microcomputer committee met on November 9 to discuss multiuser microcomputers (super-microcomputers) in view of satisfying a major portion of the computer processing requirements of the scientific and administrative staff. In attendance were data systems manager Fred Kellenberger, mathematician Al Coan, computer specialist Rich Charter, computer programmer analyst Robert Nydam, and systems analyst Dorothy Roll.

Because the needs of data management support differ from the needs of volume number crunching for scientific analysis, two super-microcomputer systems will be investigated. One system, oriented toward data management support, may be satisfied by the Molecular Computer "Supermicro", based on the INTEL 8086. The system for scientific support may be the faster 68000 based system, such as a networked SAGE II. On November 22, Charter, Nydam, and Roll, visited the QSA Office, a developer/vendor for Molecular in San Diego. They reviewed the system with QSA's technical representative. As a follow-up, the committee plans a visit to a customer site to watch the Molecular System in operation.

Word Processor Committee Meets

On November 29, the word processor committee met to consider the possibility of upgrading the Center's word processing system in order to satisfy the requirements of the scientists and secretarial staff more efficiently. The committee members, data systems manager Fred Kellenburger, fishery biologists Andy Dizon and John Hunter, secretaries Frances Begley and Julie Shoemaker, editorial assistant Lorraine Prescott, and systems analyst Dorothy Roll discussed the viable alternatives: 1) upgrading to the NBI system 64 supporting up to 32 I/O devices and providing 66 million characters of document storage on a hard disk, 2) providing the secretarial staff and scientific staff with the La Jolla Standard Microsystems for utilizing WORDSTAR to draft/edit and produce final copies on a letter quality printer, and 3) reviewing the vendor market for other word processing systems. On November 30, the sales and technical representatives for NBI presented the technical features of their word processing systems to the committee. Other

word processing vendors will be invited to give a presentation to the committee during this review process.

Programming System for Rockfish Data Completed

Nancy Wiley, Tiburon Laboratory, reports that Candis Cooperrider, Fishery Biologist, and LT (jg) Fredric Plotkin, NOAA Corps, have completed a programming system which summarizes data from commercial and recreational rockfish landings in central and northern California. The data are collected in a cooperative effort by the Rockfish Analysis Task and the California Department of Fish and Game. The system creates summary reports weighted to sampled landings and to total landings which show catch estimates by species, sex, length, and age assemblages for any combination of geographic locations and time periods.

The system consists of eight programs which edit the raw data, accumulate and calculate sampled landing summary quantities, and expand these quantities to the total catch. Each program provides error traps which aid in data error detection. The summary reports are output for easy reference by rockfish managerial personnel: they are printed on notebook size (8 1/2" x 11") paper, the important title information is accented by overprinting, and the summary information appears in a table.

Data from 1978 and 1979 have already been processed through the entire system. Summary reports weighted to the sampled landings are currently being produced for the years 1977, 1980, 1981, and the first half of 1982. Summary reports weighted to the total landings will be produced pending receipt of total catch values from the CDF&G.

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The Southern California and Arizona Federal ADP Council held the first of three FY 1983 meetings on November 19 at the Admiral Kidd Club. With the theme, "ADP - A Look to the Future," the featured speakers were Capt. Phil Monroe, NARE, San Diego, on implementation of a micro, Mr. C.J. Date, IBM, on relational data bases, and Ms. Marge Stevens, GSA Technical Services Branch, on local GSA ADP Support. In attendance from the Southwest Fisheries Center were computer specialists Frank Ralston, Rich Charter, and Susan Iacometti, biological technicians Al Jackson and Randy Smith, computer programming analyst Ken Wallace and Robert Nydam, computer programmer Cindy Meyer, and systems analyst Dorothy Roll.

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A micro workshop on assembling the La Jolla Standard Micros was conducted by Mr. William Tester on November 10 in the La Jolla Laboratory. During this session fishery biologists Rick Methot, Norm Bartoo, and Sam Herrick assembled their units.

MISCELLANEOUS

PUBLIC AFFAIRS

La Jolla Laboratory

On November 16, Mr. John Carr, Deputy Director, presented an overview of research activities at the Southwest Fisheries Center to participants of the Pacific Marine Fisheries Commission's annual meeting in Monterey, CA. Areas of special interest highlighted in the talk dealt with the Fisheries Information Network (FIN), coastal marine mammals, striped bass, and research aspects of work on albacore, groundfish, and anchovy.

Mr. Carr also made a presentation on November 29 to representatives of USC Sea Grant; the meeting was held at Terminal Island, CA. Mr. Carr spoke on research projects of potential interest to USC in carrying out its Sea Grant mission.

Tiburon Laboratory

On November 19, fishery biologist Mickey Eldridge gave a 3-hour talk and laboratory session on marine fishes and their environments to students of Petaluma Elementary School.

On November 19, industry economnist Ed Ueber represented NMFS in a seminar at San Francisco State University. The seminar, sponsored by the Biology Department. addressed job opportunities in the fisheries field. Approximately 50 students attended.

SEMINARS

Honolulu Laboratory

November 10 - Dr. Noel C. Gillespie, Director, Fisheries Research Branch, Department of Primary Industries, Queensland, Australia, spoke on the ongoing research at his laboratory.

12 - George H. Balazs, Fishery Biologist, spoke on "Some biological and historical aspects of sea turtles at Rose Atoll and the Manua Group of American Samoa."

La Jolla Laboratory

November 2 - Sharon Lundin, Chief of Employee Services and Staffing Branch, NASO, presented a Merit Pay Seminar in the auditorium.

4 - Dr. Michael Laurs, Oceanographer, presented a talk entitled, "Fisheries Application of Satellite Remote Sensing" in the auditorium.

9 - David Mackett, SWFC Planning Officer, talked on "The Southwest Fisheries Center's Strategic Planning System: Where We Are and Where We're going" in the auditorium.

- Professor Yasunobu Matsuura of the Oceanographic Institute, University of Sao Paulo, lectured on "A New Brazilian Skipjack Fishery and Related Research."

16 - Dr. James Joseph, Director of Investigations for the Inter-American Tropical Tuna Commission, presented a seminar on "A Program Review of the Inter-American Tropical Tuna Commission."

22 - Dr. Alexander N. Christakis of Christakis and Associates, Ltd., Charlottesville, Virginia, gave a talk entitled "Theory and Practice of Interactive Management of Natural Resources."

30 - Dr. David Farris, San Diego State University, presented a seminar on "Conservation of Wildlife - Focus on a Disturbing Trend."

VISITORS

Honolulu Laboratory

November 8 - Dr. Noel C. Gillespie, Fisheries Research Branch, Department of Primary Industries, Queensland, Australia, met with W. Gilmartin, Howard O. Yoshida, Fishery Biologist, and Research Assistant Robert L. Humphreys, Jr.

- Enroute to the IPFS and IOFC meetings in Bali, Dr. Brian Rothschild of the University of Maryland's Center for Environmental and Estuarine Studies, visited the Laboratory.

19 - Nancy Riegle-Hussey met with W. Gilmartin to discuss the marketing of underexploited species.

23 - T. F. Chen, Taipei, Taiwan, visited R. Shomura.

29 - Mike Gawel, the new Chief of Marine Resource Division, Federated States of Micronesia, Ponape, Eastern Caroline Islands, visited R. Shomura.

- Lillian Vlymen and Nancy LaRoche of the Southwest Fisheries Center visited the Laboratory during their Hawaiian vacation.

La Jolla Laboratory

November 1 - Russel Rodriguez, Pacific Marine Fisheries Commission, visited the Laboratory.

3 - Greg Loch, San Diego State University, toured the research facilities.

- Yoshio Tozawa, Tokyo Scientific Center, IBM Japan, Tokyo, met with Laboratory personnel.

4- 6 - Ruth Johnson, Secretary to Dick Roe, Office of Marine Mammals and Endangered Species, NMFS, Washington, D.C., was a guest at the La Jolla Laboratory.

9 - Tony Jones, San Diego State University, visited the Laboratory.

15 - Gary Vontungen, San Diego District Attorney, met with Laboratory personnel.

16 - Dr. Naida Yolen, NMFS, Washington, D.C., met with Center Director Izadore Barrett.

23 - Gary Cram, Crest International Corporation, San Diego, and Jim Massard, Specialty Seafoods, Townsville, Australia, toured the Laboratory facilities.

Tiburon Laboratory

November 3 - Michael J. Herz, Tiburon Center for Environmental Studies.

- Tokihide Ichinose, ABS Fishing Company, San Francisco, CA.

9 - Thomas P. Scott, Verd-A-Ray Corp., Larkspur, CA.

15 - Naida Yolen, Sea Grant, Rockville, MD.

- Carl Burlesci, Colintino Rose, Coos Bay, OR.

- K. Takayama, Wescon International, San Francisco, CA.

18 - Jim Brooker, NMFS, Washington, D.C.

- Robert Williams, NMFS, Washington, D.C.

22 - Robert Clutter, San Francisco, CA.

Pacific Environmental Group

November 16 - John F. Carr, Deputy Director from the Southwest Fisheries Center, La Jolla, CA.

- J. Gary Smith and Jay Ginter from the Southwest Regional Office, Terminal Island, CA.

- Roland Finch from the National Marine Fisheries Service, Washington, D.C.

17 - Norman J. Abramson from the Tiburon Laboratory, Tiburon, CA.

- Murray L. Hayes from the Northwest and Alaska Fisheries Center, Seattle, WA.

23 - Pete Adams and Connie Ryan from the Tiburon Laboratory, Tiburon, CA.

MEETINGS AND TRAVEL

Honolulu Laboratory

November 17 - As the Acting Director of the Honolulu Laboratory, November 1-19, Dr. William Gilmartin attended the first meeting of the Hawaii Fishing Coalition, Inc., at the Oceania Floating Restaurant.

La Jolla Laboratory

November 2- 5 - Sam Herrick traveled to Orlando, FL to participate in the NMFS Economists National Workshop.

2- 6 - Dan Huppert traveled to Orlando, FL to participate in the NMFS Economists National Workshop.

15-17 - John Carr traveled to Monterey, CA to attend the Pacific Marine Fisheries Commission's annual meeting.

15-18 - Dan Huppert traveled to Monterey, CA to attend the SSC and PFMC meetings.

15-19 - Earl Weber traveled to Monterey, CA to consult with PEG personnel on including environmental parameters in albacore model.

16-17 - Izadore Barrett traveled to Reno, NV to attend the Western Fishboat Owners Association's annual meeting.

16-17 - Dave Mackett traveled to Long Beach, CA to attend the International MBO Institute Conference.

16-17 - Ben Remington traveled to Terminal Island to brief a new Administrative Officer.

17-18 - Rick Methot traveled to Monterey, CA to present the Anchovy Plan Amendment to the Pacific Fishery Management Council.

18 - Fred Kellenberger traveled to Long Beach to attend a FIN meeting.

21-27 - Mike Laurs traveled to Honolulu, HI to prepare a draft of a manuscript with Jerry Wetherall on albacore growth and age using otolith daily ring method incorporating tetracycline experiment.

22-25 - Chuck Oliver traveled to San Clemente Island to continue studies on pinnipeds.

November 25- December 14 - Wes Parks traveled to Noumea, New Caledonia and Colombo, Sri Lanka in response to a FAO request for assistance in drafting specifications for a data base on tuna fisheries in the area of interest of the FAO/ UNDP Indo-Pacific Tuna Program.

November 25- December 7 - Doug DeMaster traveled to San Miguel Island to finish harbor seal work.

29-30 - Robert Nydam traveled to Las Vegas, NV to attend the COMDEX Fall '82 Computer Exposition.

29 - A Word Processing meeting was held in the small conference room at 8:30 a.m.

November 30- December 1 - Izadore Barrett and Gary Sakagawa taveled to Terminal Island, CA to discuss porpoise matters with Dick Roe.

November 30- December 3 - John Hunter traveled to Washington, D.C. to attend the National Science Foundation Ocean Science Research Section Panel Meeting.

Tiburon Laboratory

October 29- November 8 - Gregory Hall participated in NOAA/CDFR observer program aboard seismic survey vessel A. E. O. Vette.

October 31- November 5 - Walburga Giguere attended a DOC-sponsored training held in Seattle, WA.

November 2- 6 - Ed Ueber traveled to Orlando, FL to attend a meeting of NMFS economists.

12-12 - Maureen Woods attended a California Union List of Serials (CULP) data base workshop in San Jose, CA.

15-17 - Ed Ueber and Sus Kato traveled to Monterey, CA to attend the Pacific Marine Fisheries Commission (PFMC) meeting.

15-19 - Norman J. Abramson traveled to Monterey, CA to attend the SSC and PFMC meetings.

17-18 - William H. Lenarz traveled to Monterey, CA to attend the PFMC meeting

26 - Ed Ueber traveled to Sacramento, CA to attend a meeting on striped bass valuation.

Pacific Environmental Group

November 9-10 - Dr. Douglas McLain gave a talk on MOODS and oceanographic data exchange at PMEL in Seattle, WA.

22-24 - Dr. Richard Parrish attended the Albacore Planning Meeting in La Jolla, CA.

PERSONNEL ACTIONS

Honolulu Laboratory

November 5- - Mark D. Ow, Computer Assistant - Part-time, Temporary Appointment.

16- - Lynn M. Hondonero, Clerk-Typist - Termination of Appointment.

26- - Penelope S. Scoggins, Biological Technician (Wildlife) - Termination.

29- - Ronald C. Antinoja, Compuyter Assistant - Extension of Appointment.

La Jolla Laboratory

Year-long Plan of Activities for the Federal Women's Program Proposed

Based on the results of the Federal Women's Progrm survey of women at the SWFC La Jolla Laboratory, the FWP Committee of Susan Picquelle, Jacqueline Jennings, and Virginia Hostler has proposed a plan of activities for the 1982-83 fiscal year. These activities were either specifically chosen by the women who responded to the survey, or were chosen by the FWP committee to be the most effective means of achieving the goals that were given highest priority in the survey results. These proposed activities are: (1) assertiveness training, (2) a newsletter containing articles of general interest to women and information on local training opportunities, (3) a workshop on confidence building, (4) stress reduction training, (5) an examination of the hiring and promotion practices at the SWFC as it relates to women, and (6) a series of seminars by successful women.

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November 5- - Barbara Sumida-MacCall, Fishery Biologist - Leave Without Pay.

22 - William Brinkerhoff, Biological Technician - Redescription of Duties.

26 - Lisa Ferm, Biological Technician - Termination.

Tiburon Laboratory

November 16 - Candis Cooperrider, Fishery Biologist - Extension of Appointment.

30 - Carol Reilly, Fishery Biologist - Termination.

- Karen Taberski, Fishery Biologist - Termination.

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